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1: Am J Clin Nutr. 1983 Jun;37(6):918-23.

Links

Dietary cholesterol decreases the serum level of zinc: further evidence for the positive relationship between serum zinc and high-density lipoproteins.

Koo SI, Ramlet JS.

The previous finding (Am J Clin Nutr 1981;34:2376-81) that the serum level of high-density lipoprotein (HDL) cholesterol is positively correlated with the serum concentration of zinc ($r = +0.81$; p less than 0.01) led us to evaluate further the zinc-HDL relationship as affected by dietary cholesterol. The two diets, one control diet containing no cholesterol and the other containing 1% cholesterol, were isocalorically formulated with an equal but adequate level of zinc. Cholesterol feeding produced a significant decrease in the serum level of HDL cholesterol at 8th wk of dietary treatment and a significant increase in very low density lipoprotein cholesterol at 4th and 8th wk. At the same intervals of dietary treatment, significant decreases in serum zinc levels were observed in cholesterol-fed rats; no changes were noted in the serum levels of other related elements such as copper, calcium, and magnesium. Linear regression analysis of the 44 pairs of serum HDL and zinc values revealed a significant positive correlation ($r = +0.57$; p less than 0.01) between the two parameters. The rather selective lowering of serum zinc due to cholesterol feeding and the observation of the positive serum zinc-HDL relationship observed in the present and previous studies warrant further investigation into the role of zinc in cholesterol and high-density lipoprotein metabolism.

PMID: 6846238 [PubMed - indexed for MEDLINE]

Related Links

Effect of dietary linoleic acid on the tissue levels of zinc and copper, and serum high density lipoprotein cholesterol. [Atherosclerosis. 1984]

Relationship between the nutritional status of zinc and cholesterol concentration of serum lipoproteins in adult male rats. [Am J Clin Nutr. 1981]

Different effects of zinc and copper deficiency on composition of plasma high density lipoprotein. [J Nutr. 1985]

Compositional changes in plasma high-density lipoprotein particles in marginally zinc-deficient male rats. [J Clin Invest. 1983]

Effect of garlic (Allium sativum linn) on serum lipoproteins and lipoprotein cholesterol levels in albino rats rendered hypercholesteremic by feeding cholesterol. [Lipids. 1982]

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